

# SF81 THRU SF88

## GLASS PASSIVATED SUPER FAST RECTIFIER

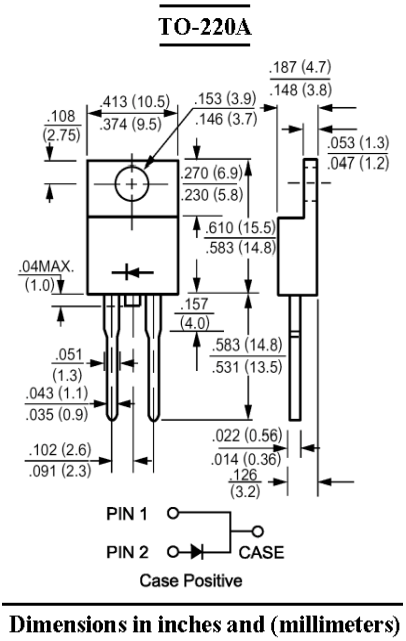
Reverse Voltage – 50 to 600 V  
Forward Current – 8 A

### Features

- Low forward voltage drop
- Low reverse leakage current
- Superfast switching time for high efficiency
- High current capability
- High surge current capability

### Mechanical Data

- Case: Molded plastic, TO-220A
- Epoxy: UL 94V-0 rate flame retardant
- Terminals: leads solderable per MIL-STD-202 method 208 guaranteed
- Polarity: As marked
- Mounting Position: Any

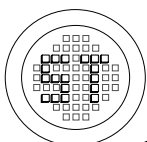


### Absolute Maximum Ratings and Characteristics

Ratings at 25 °C ambient temperature unless otherwise specified. Single phase, half wave, 60 Hz, resistive or inductive load. For capacitive load, derate current by 20%.

Parameter	Symbols	SF81	SF82	SF83	SF84	SF85	SF86	SF87	SF88	Units
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	50	100	150	200	300	400	500	600	V
Maximum RMS Voltage	$V_{RMS}$	35	70	105	140	210	280	350	420	V
Maximum DC Blocking Voltage	$V_{DC}$	50	100	150	200	300	400	500	600	V
Maximum Average Forward Rectified Current at $T_C = 100^\circ C$	$I_{(AV)}$	8								A
Peak Forward Surge Current, 8.3 ms Single half Sine-wave Superimposed on Rated Load (JEDEC method)	$I_{FSM}$	125								A
Maximum Forward Voltage at 8 A and 25 °C	$V_F$	0.95			1.3		1.7			V
Maximum Reverse Current at $T_A = 25^\circ C$ at Rated DC Blocking Voltage $T_A = 125^\circ C$	$I_R$	10				500				$\mu A$
Typical Junction Capacitance <sup>1)</sup>	$C_J$	80				60				pF
Maximum Reverse Recovery Time <sup>2)</sup>	$t_{rr}$	35				50				ns
Typical Thermal Resistance <sup>3)</sup>	$R_{\theta JC}$	2.2								$^\circ C/W$
Operating and Storage Temperature Range	$T_J, T_s$	- 55 to + 150								$^\circ C$

<sup>1)</sup> Measured at 1 MHz and applied reverse voltage of 4 VDC.  
<sup>2)</sup> Reverse recovery test conditions:  $I_F = 0.5 A$ ,  $I_R = 1 A$ ,  $I_{RR} = 0.25 A$   
<sup>3)</sup> Thermal resistance from Junction to case mounted on heatsink.



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## RATINGS AND CHARACTERISTIC CURVES

FIG.1- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

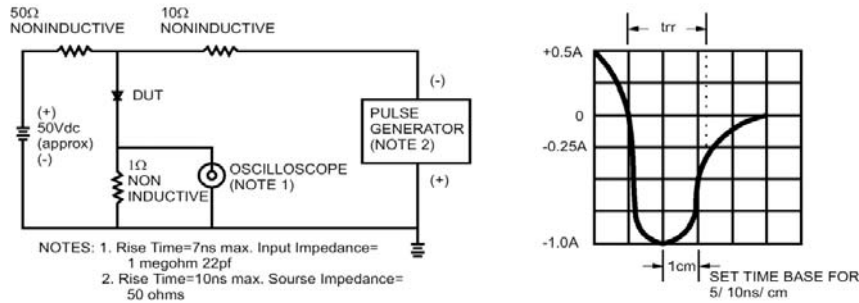


FIG.2- MAXIMUM FORWARD CURRENT DERATING CURVE

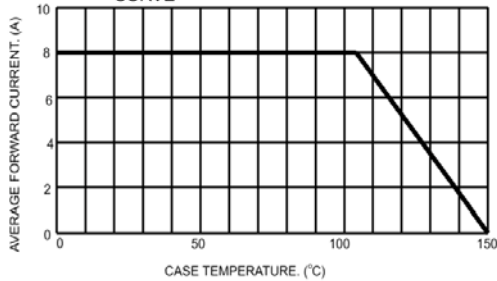


FIG.3- TYPICAL REVERSE CHARACTERISTICS

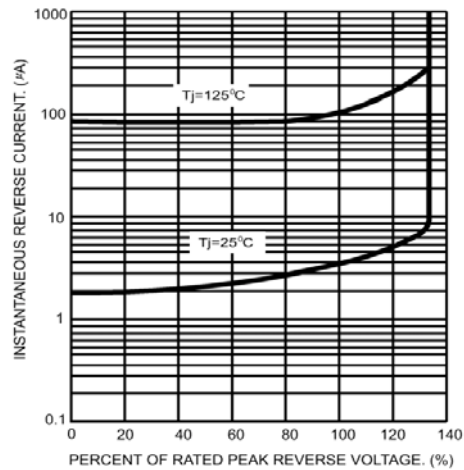


FIG.4- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

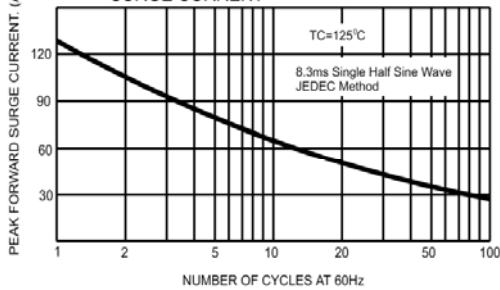


FIG.6- TYPICAL FORWARD CHARACTERISTICS

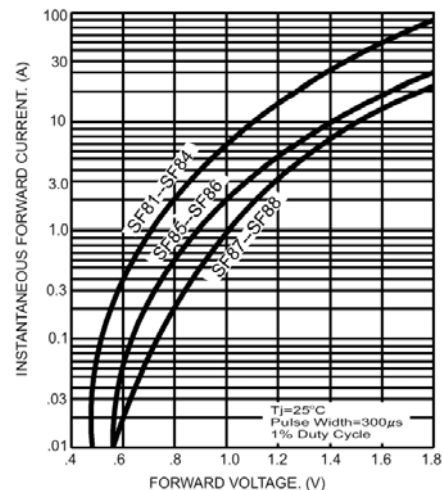
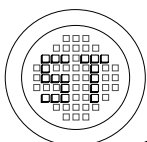
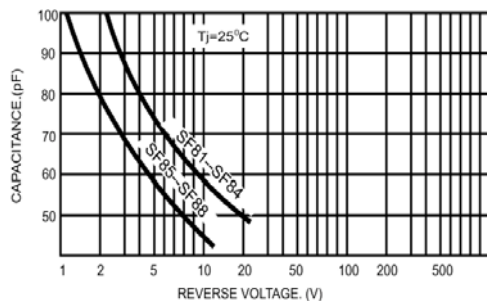


FIG.5- TYPICAL JUNCTION CAPACITANCE



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